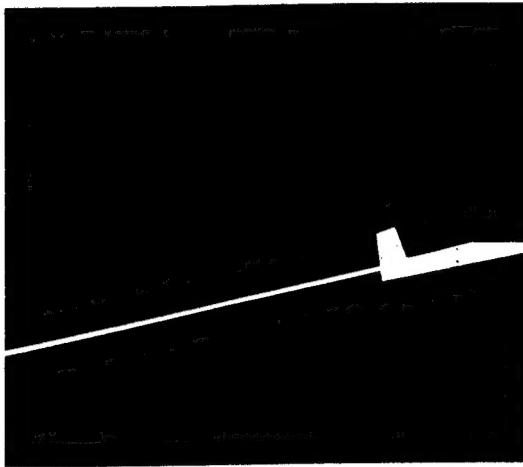


12290



# SIDAC

*Supportability Investment Decision Analysis Center*

Contract No. F33657-92-D-2055/0088  
CDRL A009, Data Item DI-MGMT-80057  
Report No. SID/MR-95/0222

(Unclassified)

## TASK ASSIGNMENT PLAN

for

### Develop an Army FAMMAS Model (Windows)

Prepared for

HQ USA/DALO-RMI  
500 Army Pentagon  
Washington, DC 20310-0500

6 April 1995

Prepared by

Synergy, Inc.  
1763 Columbia Rd., NW  
Washington, DC 20009-2834

Submitted by

SIDAC  
5100 Springfield Pike  
Dayton, OH 45431

19970128 038

This report has been approved for publication.

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Maj David Payne  
Secondary Items Division  
HQ USA/DALO-RMI  
500 Army Pentagon  
Washington, DC 20310-0500

FOR THE COMMANDER

*Approved for public release, distribution is unlimited.*



Synergy, Inc.  
1763 Columbia Road, NW  
Washington, DC 20009  
202-232-6261  
FAX: 202-232-8359

10 April 1995

HQ USA/DALO-RMI  
500 Army Pentagon  
Washington, DC 20310-0500

Attn: Maj David Payne, Secondary Items Division

Dear Maj Payne:

Contract F33657-92-D-2055  
SIDAC Task No. 93  
Delivery Order No. 0088  
CDRL A009, Data Item MGMT-80057

Enclosed is the Task Assignment Plan for *Develop an Army FAMMAS Model (Windows)*, as required under the above-referenced contract.

If you have questions, please contact me at 202-232-6261.

Sincerely,

A handwritten signature in black ink, appearing to read "Raymond L. Reed". Below the signature, the text "Task Leader" is printed in a smaller, sans-serif font.

RLR/gd

c: DCMAO (Mr. Leon Sulton) Letter Only  
SIDAC (Mr. Heston Hicks)

# REPORT DOCUMENTATION PAGE

Form Approved  
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1213 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget. Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE 6 April 1995	3. REPORT TYPE AND DATES COVERED Task Assignment Plan	
4. TITLE AND SUBTITLE  Task Assignment Plan for Developing an Army FAMMAS Model (Windows)		5. FUNDING NUMBERS  Contract No. F33657-92-D-2055  Delivery Order No. 0088	
6. AUTHOR(S)  Trench, Sean K. Reed, Raymond L.		8. PERFORMING ORGANIZATION REPORT NUMBER  12290 SID 12284	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)  Synergy, Inc. 1763 Columbia Rd, NW Washington, DC 20009			
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)  HQ USA/DALO-RMI 500 Army Pentagon Washington, DC 20310-0500		10. SPONSORING/MONITORING AGENCY REPORT NUMBER  SID/MR-95/0222	
11. SUPPLEMENTARY NOTES			
12a. DISTRIBUTION/AVAILABILITY STATEMENT  Approved for Public Release, Distribution is Unlimited		12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words)  This Task Assignment Plan explains how Synergy will fulfill the HQ USA/DALO-RMI requirement for the development of an Army Readiness Model. This model will assess peacetime readiness expected as a result of past, current, and projected Investment Variables (Repairable Buy and Repair funding streams) and Non-Investment Variables (Crewing, Staffing, Utilization). The Army model will be an adaptation of the Funding/Availability Multi-Method Allocation for Spares (FAMMAS) model used extensively by both HQ U.S. Air Force and Air Force Materiel Command (AFMC).			
14. SUBJECT TERMS  Army's 16 SORTS Weapon Systems, Funding Availability Multi-Method Allocation for Spares (FAMMAS)			15. NUMBER OF PAGES 4
			16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT

Contract No. F33657-92-D-2055  
SIDAC Task Number 93, Delivery Order No. 0088  
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for  
Develop an Army FAMMAS Model (Windows)**

Prepared for

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**TASK ASSIGNMENT PLAN**  
on  
**Develop an Army FAMMAS Model (Windows)**

## **INTRODUCTION**

Synergy will fulfill the HQ USA/DALO-RMI requirement for the development of an Army Readiness Model. The model will assess peacetime readiness expected as a result of past, current, and projected Investment Variables (Repairable buy and Repair funding streams) and Non-Investment Variables (Crewing, Staffing, Utilization). The Army model will be an adaptation of the Funding/Availability Multi-Method Allocation for Spares model (FAMMAS) used extensively by both HQ U.S. Air Force and Air Force Materiel Command (AFMC).

## **GOALS AND OBJECTIVES**

Synergy will design an Army FAMMAS model in a Windows environment. The model will be fully documented and tested. The Army FAMMAS model will provide the Army's users, at each echelon of command the ability to provide quick and consistent weapon system assessments. However, FAMMAS's utility is limited by the currency of the data being used. To ensure consistent results, each echelon of command needs to be provided the same data at approximately the same time. The best way to ensure accuracy and consistency of data is to connect each of the users to the same data set through an electronic network. Synergy will develop a Files Management System (FMS), determine source data, and develop interfaces to automate (to the fullest extent) the data for each of the sources.

The FAMMAS model currently assesses capability for one weapon system at a time, given a set of resources allocated to that weapon system. However, the weapon system Army's resource managers and weapon system monitors are often faced with the task of allocating shortfalls in funding within each weapon system as well as among all the weapon systems. Fair share allocation approaches often result in an imbalanced capability as some resources may be more sensitive than others to changes in funding. The ability to balance resources within each weapon system and among all weapon systems will provide the Army resource and weapon system managers with the capability to quickly identify out-of-balance funding situations within their weapon systems program. Additionally, this capability will enable rational recommendations to be made to the Army's decisionmakers in performing zero cost changes in weapon system programs to maximize weapon system readiness. Synergy will develop resource allocation process among the 16 SORTS weapon systems. Routines will be designed to allow users to determine how best to allocate depot-level repairable (DLR) funding and manpower factors.

Upon completion of the development phase, the production versions of the model will be transferred to a designated Army agency for support and operations. However, until completion of the development phase, the assessments will continue to be done with modified versions of the models requiring Synergy's support to perform the assessments. These assessments will provide the Army with a continuous view of the health of its weapon systems and allow the end-level administrators and Army HQ to interact at a higher level to determine the required funding needed for each system.

The current Air Force version of FAMMAS has the flexibility to assess the impacts on how changes in training policies affect weapon system readiness. Even though the Army believes that training needs to be incorporated in their FAMMAS assessments, the relationship between weapon system readiness and training policies are not well defined. Additionally, the relationship between dollars designated to provide training and the level of training provided would need to be defined by the Army to assess the impact on shortfalls in funding for training.

## **TECHNICAL APPROACH**

Upon completion of the contract to conduct initial peacetime assessments on the Army's 16 SORTS weapon systems, Synergy will begin development of an Army FAMMAS model in Windows. Synergy will develop the general architecture for an Army FAMMAS model and provide a preliminary design review (PDR). Then we will define the Army National Military Command System (NMCS) parameters and develop Army curves with the Army Availability Models (SESAME/SPA). This improved methodology will be installed in the FAMMAS model. Upon approval of the PDR, a prototype will be developed and initial testing will take place. After testing is completed, a critical design review (CDR) will be held.

Once there has been CDR approval, any appropriate changes to the software will take place. A help system will be developed and complete Verification/Validation (Ver/Val) will be conducted. A Beta version of the model will be released for user testing and a draft users manual. At this point, the functional description (FD) will be finalized. Upon completion of Beta testing, any appropriate changes as approved by Army staff will be made. The software Version 1.0, the users manual, and FD will be delivered. An over-the-shoulder training program will be held for the users.

In addition, the ability to allocate resources among the 16 SORTS weapon systems will be developed. Routines will be designed to allow users to best determine how to allocate resources. Impacts, such as reduced DLR funding on each weapon system while maintaining availability goal or increased manpower factors (i.e., utilization, availability, etc.), will be modeled.

Quarterly assessments will be conducted using the FAMMAS model for peacetime and wartime. Color reports will be submitted.

In an effort to automate the process as much as possible, a files management system (FMS) will be developed. Data sources will be determined along with interfaces to automate (to the fullest extent) for each of the sources. If required, a data base will be developed. Copies of the updated FD, users manual, and software will be provided.

## **PROJECT SCHEDULE AND MILESTONES**

The Work Breakdown Structure (WBS) in Figure 1 represents Synergy's proposed timeline for accomplishing the tasks associated with the statement of work. Synergy will apply the most experienced personnel on this project and will produce the best products possible within the time and funds allocated by the government. The Synergy program manager will prioritize the efforts for the tasks in order to make the most efficient and effective use of available resources.

## **DELIVERABLES**

The following list of deliverables will be submitted for the efforts performed under this task:

- (1) Final technical report on the task (CDRL A001). This report will present the results of the research and analysis performed in the task.
- (2) Functional description of software (CDRL A002) to aid in the instruction and use of the software.
- (3) Periodic progress and status reports submitted every 30 days throughout the duration of the contract (CDRL A004). These reports will keep the SIDAC COTR informed of the progress of the task on a monthly basis.
- (4) Software users manual to aid in the instruction and use of the software (CDRL A006).

## Army FAMMAS

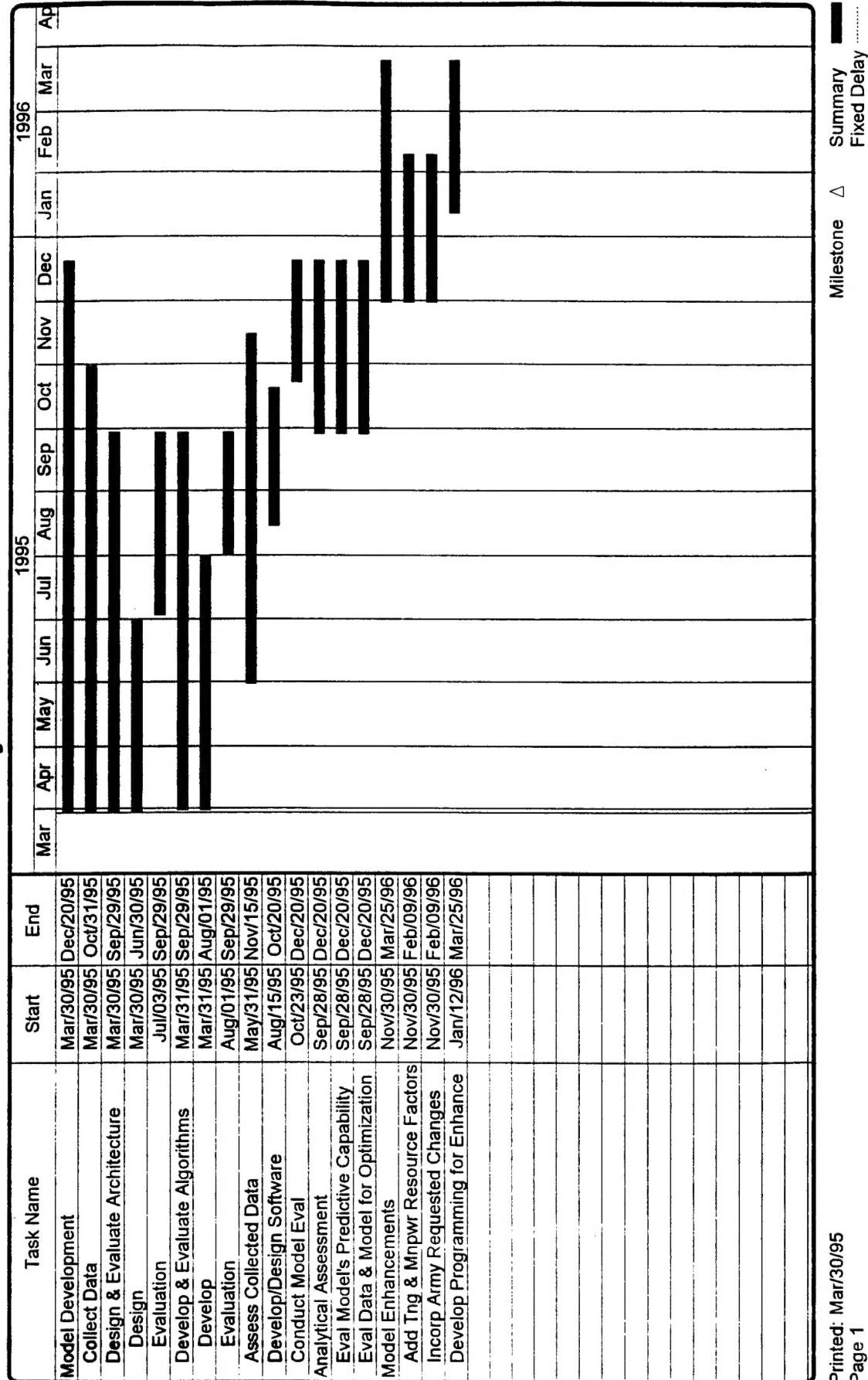


Figure 1. Work Breakdown Structure

- (5) Presentation material (CDRL A007). The final briefing on the task results.
- (6) Task assignment plan (CDRL A009). The plan presented in this document, which covers the objectives, technical approach, and schedule for performance of the Statement of Work.
- (7) The software (CDRL A014) necessary to complete the task.

## **PROJECT STAFFING AND EXPERIENCE**

This project will be staffed with extremely well-qualified personnel. The education, capabilities, and experience of key personnel are summarized here.

Mr. James A. Lutz, Program Manager, Ph.D. program in Mathematics/ graduate studies in operations research and statistics. He has more than 20 years experience in logistics management, capability assessment, program and budget analysis, and operations analysis. As a member of Synergy's Operations Management Committee, he directs the performance of work on all Synergy contracts. He specializes in the development and application of quantitative models for analysis of policies in logistics management, budgeting, capability assessment, and R&M.

Mr. Raymond L. Reed, Sr. Logistics Management Specialist, M.S. Organic Chemistry. Mr. Reed has more than 20 years experience in Air Force logistics. His areas of expertise include logistics management, tactical systems analysis, and acquisition management. He serves as the project manager for development and implementation of new parametric/interactive models, designed to perform logistics resource assessments of the U.S. Air Force's air mobility and air combat weapon systems. He will serve as the project manager for the tasking described in this document.

Mr. William E. Faragher, Sr. Scientist, M.A. Mathematics. Mr. Faragher has more than 35 years experience in operations research, and logistics analysis. He is responsible for the software development for a suite of logistics assessment models designed for estimating the impact of budget decision on aircraft readiness and sustainability. He directed the development of a data base management system that imports data from a variety of sources and generates a set of output files for use in Synergy-developed logistics assessment models. Because of his strong scientific and mathematical background, he will serve this tasking on a consultory basis.

Mr. Sean K. Trench, Associate Analyst I, B.A. Political Science. Mr. Trench is the supervisor for all O&M assessments for Army. He is responsible for completing the development of the FAMMAS model, which provides the Army with projections concerning the health of its weapon systems. He is responsible for designing, testing, and delivering this model to HQ USA/DALO-RMI.

## **POINT OF CONTACT**

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